

MARIE TRAINING PROGRAM FOR IMPROVEMENT IN ENERGY EFFICIENCY (EE) OF EXISTING BUILDINGS

**F1 | BEST PRACTICES COLLECTION**

Best Practice Name:	Energy efficiency measures for the Hospital of Florina
Code:	GR-TE-MA-02

Best Practice Description:

Type:	<input checked="" type="checkbox"/> Action for improvement in the EE	<input type="checkbox"/> Training experience (*)
Description:	<p><i>“Energy conservation study for the Hospital of Florina – Energy Audit and Energy Consultant services”</i> funded by the National Operational Program "Environment and Sustainable Development 2007-2013" (EPPERAA) - Thematic Priority 43 "Energy Efficiency, CHP, Energy Saving».</p> <p>Team: KartECO SA, March 2011.</p>	

Location:	Thessaloniki	Country:	Greece
Contact (team):	Dr. Ifigeneia Theodoridou, Co-Owner, e2 architects, Them. Sofouli 57, 55131, Thessaloniki, +302314021677, ifigeneia@e2architects.eu, www.e2architects.eu		
Type of building:	<input type="checkbox"/> Tertiary	<input checked="" type="checkbox"/> Residential	<input type="checkbox"/> Mixed
Property:	<input checked="" type="checkbox"/> Public	<input type="checkbox"/> Private	<input type="checkbox"/> Mixed
Management:	<input type="checkbox"/> Public	<input type="checkbox"/> Private	<input type="checkbox"/> Mixed
Fields of action:	<input checked="" type="checkbox"/> Construction	<input checked="" type="checkbox"/> Maintenance	<input checked="" type="checkbox"/> Use
	<input type="checkbox"/> Energy generation and distribution		<input type="checkbox"/> Other
	<input checked="" type="checkbox"/> Replacement or implementation of renewable energies		solar thermal

Please, evaluate if the following processes take place in the Best Practice that you are describing in this form:

	Yes	No
The <b>data collection</b> has been complete and rigorous	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Communication and awareness</b> processes have been developed to disseminate this practice	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Training actions</b> have been provided	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Product and services</b> have been improved	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Jobs</b> have been created	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Sustainable financial models</b> have been applied	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Agreements or <b>collaboration models</b> have been defined between parties	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Positive impact tested in the following fields (add quantitative data if you have):

<b>ENERGY EFFICIENCY IMPROVEMENT (EE)</b>	For the improvement of the building’s energy behavior a series of intervention scenarios were developed according to the degree of intervention and the related costs. The interventions refer to retrospective thermal insulation of vertical and horizontal surfaces of the building-complex as well as replacement of old windows. Moreover, interventions regarding the HVAC systems of the building-complex such as new boilers, thermal insulation for the distribution
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	systems and new thermostatic control for high efficiency. In addition, the installation of lighting system automation with sensors, motion detectors and diming control according to the LUX levels. Furthermore, the implementation of solar-thermal panels for the coverage of the DHW demand of the Hospital was foreseen. Each intervention was evaluated according to the National Simulation Program that is in terms with the Energy Performance of Buildings Directive (EPBD), called TEE-KENAK.
<b>FINANCIAL COVERAGE</b>	By means of the initial investment costs and the investors, the presented project is based on a National Investment Program aiming at the CO <sub>2</sub> emissions' reduction of the building. For this purpose specific economic evaluation models were applied. Hence, the total investment cost combination of the interventions mentioned above was estimated at 905,158.00 euros by means of the investment costs. The pay-back period was also estimated reaching less than 5 years. Thus, the annual operation costs for the existing building would drop from 348,259.20 euros to 162,339.40 euros if the proposed interventions were to be applied. This would also lead to a 43% reduction of the primary energy consumption of the building and a reduction of 75 Kg/m <sup>2</sup> by means of the building's CO <sub>2</sub> emissions.
<b>EMPLOYABILITY POTENTIAL</b>	The implementation of the proposed measures would lead to new positions for engineers who will perform the studies for each phase of the project as well as during the construction supervision. In addition, the material industry is drastically participating and all parties regarding the construction industry.
<b>OTHER</b>	Besides, energy, economic and environmental profit, energy efficiency, especially as regards the aged existing school buildings comes with social benefits. Thus, indoor air-quality as well as thermal and visual comfort are of high importance by means of Hospitals and any form of healthcare buildings. These measures will increase the quality of the building and raise awareness for young students, hence our future citizens.
<b>DIFFICULTIES</b>	Difficulties mainly refer to lack of data input and bureaucracy issues.

Agents involved in this experience:

<input checked="" type="checkbox"/>	Legislation agencies
<input type="checkbox"/>	Public promoters
<input type="checkbox"/>	Private promoters
<input checked="" type="checkbox"/>	Technical public institutions
<input type="checkbox"/>	Technicians of the private sphere (professional associations ...)
<input type="checkbox"/>	Builders
<input type="checkbox"/>	Industrial
<input type="checkbox"/>	Facility Managers (property managers, cleaning companies ...)
<input type="checkbox"/>	Energy supply companies
<input checked="" type="checkbox"/>	Users/owners (homeowners association, schools ...)
<input type="checkbox"/>	Other:
<b>GAPS</b>	

(\*) **RR\_TT\_BB\_FF\_NN**

**RR** Region: **CA** (Catalunya), **EV** (Evora), **LA** (Larnaca), **MT** (Malta), **PA** (PACA), **SL** (Slovenia), **UM** (Umbria), **WM** (Western Macedonia)

**TT** Type of BP: **BP** (project and work), **TR** (training)

**BB** Type of building: **RE** (residential), **TE** (tertiary)

**FF** Field of action: **CO** (construction), **MA** (maintenance), **US** (use), **EN** (energy generation and distribution), **OT** (other)

**NN** Number of the practice: **01, 02, 03...**

**(\*)IN CASE OF A TRAINING EXPERIENCE:**

Course name:	
Duration:	<i>Training hours/ECTS</i>
Web:	
Director/a:	
Who is it aimed:	<i>Profile of trainees</i>
Objectives:	<i>What enables this training?</i>
Program:	
Methodology:	<i>Format (face-to-face, on-line), structure of sessions, visits, case studies, evaluation systems, dynamic sessions, other aspects ...</i>

*I agree to bring this experience to the database of the MARIE project, which will create a comprehensive training program for improving the energy efficiency of buildings in the area of the Mediterranean.*